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Virginia Polytechnic Institute
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Frequently Asked Questions

What is the Solar Decathlon?

The Solar Decathlon is an intercollegiate competition among student teams that will design, build, and operate solar-powered, energy-efficient houses. Teams will compete to create and use enough power to serve the needs of a small household, a home-based business and the transportation needs of both.

When and where will the Solar Decathlon take place?

In the fall of 2002, teams will transport their houses to the National Mall in Washington D.C., for a week of ten Solar Decathlon contests.

Why have a Solar Decathlon?

The 21st century presents challenges that demand sophisticated energy technologies. These new technologies must be cost effective and environmentally sound, and would ideally lessen our dependence on uncertain fossil-fuel supplies. The U.S. Department of Energy (DOE) has a long history of working with private-sector sponsors and students on projects that involve energy efficiency and renewable energy technologies to ensure a brighter, cleaner future. Like the American Solar Challenge, Sunwall, and other student contests, the Solar Decathlon will help the United States maintain its technological competitive edge. Tomorrow's scientists, engineers, architects, and entrepreneurs will gain hands-on experience in research and development of energy-efficient products, solar energy technologies and advanced building design. Consumers will also benefit by learning from the competition and touring the contest homes, thereby increasing their ability to make informed decisions about energy use.

Who will participate in the Solar Decathlon?

Unlike its athletic counterpart, the Solar Decathlon is a team event in which the diversity of abilities comes from the composition of the team, rather than a single individual. Architecture and engineering students will work with students from other disciplines such as marketing, communications, graphic arts, analysis, and computer science to accomplish the trouble shooting, communicating, dreaming, and building this challenging event will require. Students and faculty from universities, colleges, and technical colleges from across the country will form the Solar Decathlon teams. Teams will also seek assistance from experts in industry, research, and academia.

How were competitors selected?

The Solar Decathlon entries were selected through a proposal system. Teams made up of students and faculty from a variety of educational institutions and academic disciplines submitted plans for their contest house to the Solar Decathlon Proposal Review Committee. This committee includes engineers, scientists, and other experts at DOE's National Renewable Energy Laboratory. The Proposal

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Review Committee announced the 14 schools who will compete in April of 2001. A list of teams and links to information about the plans of each is available at http://www.eren.doe.gov/solar_decathlon/.

How will the competition work?

The chosen teams have approximately 15 months to design, engineer, and build custom 500-square-foot, solar-powered houses. The teams will transport their houses to Washington D.C. where they will be assembled to compete in the ten different contests. The Solar Decathlon contests will run for seven days. Only the solar energy available within the perimeter of each house will be used to generate the thermal, electrical and mechanical power needed to compete. Competitors will be required to provide energy for a small household, a small home-based business and related transportation needs. The house that can produce enough energy and use that energy the most efficiently will be the winner.

What are the ten Solar Decathlon contests?

Each contest will be worth 100 points, as described below:

Design and Livability: A jury of architects will judge design, innovation and aesthetics. The challenge of this contest is to successfully integrate and synthesize design and solar energy and energy efficiency technologies into a livable domestic environment.

Graphics and Communication: Each team is required to produce its own Web site, newsletters and other outreach materials, with a goal of effectively explaining the energy technologies and other distinct features of its house.

Design Presentation and Simulation: Before a project is built, the designers imagine the project through drawings, scale models and computer-generated modeling. This contest evaluates the production of an imaginative and thorough set of documents illustrating the construction of each team's house and the simulation of its energy performance.

The Comfort Zone: This contest demonstrates that each Solar Decathlon house is designed to maintain interior comfort through natural ventilation, heating, cooling, and humidity controls while using a minimum amount of energy.

Refrigeration: The challenge of this contest is to maintain appropriate temperatures in a refrigerator and freezer while minimizing energy use. Points are to be awarded based on how consistently the refrigeration units maintain interior temperatures throughout the contest week.

Hot Water: This contest demonstrates that a solar house can provide all of the energy necessary to heat water for common uses such as bathing, laundry and dishwashing.

Daily Tasks: This contest demonstrates that the sun can power every-day activities such as cooking, cleaning and watching television.

Lighting: Sunlight, moonlight, and artificial light all contribute to the livability of a house. This contest judges the elegance, quality, and energy efficiency of the lighting in the house during both the day and night.

Home Business: This contest requires that each house provides enough power to satisfy the energy needs of a small business operated from the home.

Getting Around: This contest evaluates how much "extra" energy a competition house can generate to transport solar decathletes around town in a street-legal, commercially-available electric vehicle.